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have been able to find are a brief mention in Herbert H. Smith's "Brazil, the Amazons and the Coast," p. 139 (1879), and my own allusion to it in *Entomological News*, Vol. 6, p. 15 (1895). Are the termites themselves luminous or is the phosphorescence due to some fungoid peculiar to the termite hills? Certain it is that the mounds are all phosphorescent. Smith says: "The phosphorescence is in the hills themselves, not, so far as I know, in the insects"; yet, he does not appear to have investigated this question and his statement is merely an opinion. The fact that no luminous neuropteroid insects are known argues against the theory that it is the termites themselves that emit the light, yet observations on nocturnal insects in the tropics, particularly forest insects, are so rare that such a property might easily have escaped notice. Should the light be caused by a fungus it must be one that is peculiar to the termite mounds. In the latter case, however, one would suppose that when, by the clearing of the land, the nests are exposed to the direct rays of the tropical sun the fungus would be killed; but the mounds continue luminous even in the older clearings where they have been exposed to the sun for years.

During my visit to Central America in 1905 I looked for termite nests in the hope of obtaining some data on this subject. However, I saw no termite hills like those so common in the Amazonian forests. The nests of *Eutermes*, the common form in Central America, which are built on trees and constructed of woody particles, gave entirely negative results. On one occasion I broke open one of these nests at nightfall to see if the termites within were luminous, but they showed no trace of phosphorescence.

FREDERICK KNAB

THE PLANT REMAINS OF POMPEII

BEGINNING with the destruction of Krakatoa in August, 1883, within the past twenty-five years, a new era of catastrophism may be said to have begun. The events of 1902 are still fresh in the minds of most people; the destruction by earthquake on January 16 and

April 18, respectively, of the towns of Chilpancingo in Mexico and Quetzaltenango in Guatemala; the eruption on May 8 of Pelée with the annihilation of St. Pierre. The partial destruction of San Francisco in April, 1906, due to a fault in the earth's surface along the Pacific coast of America, and the reawakening of Vesuvius with the burial of Ottajano, at the foot of the volcano, are all too recent catastrophes. These manifestations of nature's force were followed by the destruction of Valparaíso in August, 1906, and Kingston, Jamaica, in January, 1907. The most recent event in which we see earth in the making, occurred at the southern end of Italy on December 28, 1908, when by an earthquake and tidal wave, the cities of Messina, Catania and Reggio were shaken from their foundations. The events of this horror are too recent to need comment, but in view of the wide-spread interest in seismic phenomena, the writer recalls a visit to Pompeii in the summer of 1907, followed later by a visit to the National Museum in the city of Naples, where the art objects and objects of commercial and domestic use are carefully preserved from the destructive action of ash storms, wind and water. A study of the ruins of Pompeii, which was destroyed by ashes, much as Ottajano was destroyed three years ago, gives one the background to picture the civilization of the ancient Pompeiians, while a study of the objects classified in the National Museum enable the student to reconstruct the daily life and industries of that pleasure-loving people. Always interested in such matters in a general way, the writer endeavored to find what materials in such a museum bore upon the study of plants. With this in view, the museum was searched and a small collection of the plant remains of the buried city was found in one corner, and the labels in modern Italian attached to the specimens were copied, making a list of twenty plants or plant parts, that could be identified certainly in the fragmentary condition in which they were preserved in the dwelling houses beneath the layers of ashes and pumice stone vomited forth by the volcano. The list

of names and their identification are given below in the hope that the list may be made permanently useful.

Agli = the garlic.

Avellani = the filbert.

Castagne = the chestnut.

Cipolli = the onion.

Coriandrum sativum = the coriander.

Fave = the bean.

Fave a meta = bean remains in fecal matter.

Fichi e uya pressa = figs and pressed grapes.

Fichi secchie a coppie = dried figs in pairs.

Fiori di melo grande = flowers of large apples.

Frammenta di pigna = fragments of pine cone, seeds included.

Garubbe = the carob.

Grano o orzo mondato = grain freed of its hull, or covering.

Hordeum hexastichum = 6-rowed barley.

Hordeum tetrastichum = 4-rowed barley.

Lenticchi = the lentil, the pulse.

Mandorle = the almond.

Miglio = the millet.

Noci = the walnut.

Pere = the pear.

We see by an inspection of this list that the residents of Pompeii used as vegetables the onion, the garlic, the bean and the lentil, while the barley (of two kinds), the millet and the chestnut were probably ground to make bread. The fresh fruits of the table were the grape, the fig, the apple and the pear. As edible nuts, the Pompeians used filberts, chestnuts, pine seeds, walnuts and almonds, while the dried fruit comprised the fig, the carob and the grape. This is evidently only a partial list of plants actually used in Pompeii, for, as in all large cities, the vegetables and fruits sold in the markets vary with the season and the above list represents the plants on sale during late August, the date of the destruction being August 24, 79.

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NOTES ON A NEMATODE IN WHEAT

DURING the season of 1909, a nematode in wheat has made its appearance in different parts of the United States. It was found by members of the Office of Grain Investigations at Modesto, Cal., May 28, 1909, and authentic

reports of its presence have since been received from Georgia, West Virginia and New York.

~ Affected wheat heads are similar in appearance to "bunted" heads. The glumes of the spikelets spread somewhat and galls, dark in color and full of nematode larvæ, occupy the places where the kernels should be. The nematode is undoubtedly *Tylenchus tritici* Roffr., and has been known in Europe since 1745. Its life history is described by Davaine in *Comptes Rendus Acad. Sc. Paris*, Part 41, 1855, pp. 435-438 and Part 43, 1856, pp. 148-152. The European literature on the subject is extensive, but no American citations of its occurrence in the United States are known to the writer. Sorauer in his "Handbuch der Pflanzenkrankheiten," Teil III., gives a good account of the parasite and mentions it as occurring in Sweden, Holland, Germany, Austria-Hungary, Switzerland, Italy, North America and Australia (?). Dr. E. A. Bessey in a letter of June 19, 1909, says that he has observed related forms on species of *Agropyron*, *Elymus*, *Calamagrostis*, *Trisetum*, *Chaetochloa*, *Agrostis* and *Sporobolus* from various parts of the United States, but has not observed any form attacking wheat. The parasite has already gained headway in fields around Old Field, W. Va., and may prove a serious pest.

Infested wheat should be cleaned thoroughly before sowing. Dr. N. A. Cobb recommends cleaning by winnowing, sieving or skimming off the floating galls after the seed-grain has been submerged in water. Dr. E. A. Bessey suggests the probable efficiency of hot-water treatments such as are used for smut, and also mentions a treatment consisting of steeping seed in a two to five per cent. sulphuric-acid solution for one half to two hours. Sorauer, l. c., recommends soaking infested seed in dilute sulphuric acid (1 kg. sulphuric acid to 150 l. water) for twenty-four hours. Further experiments are necessary before acid and hot-water treatments can be safely recommended.

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